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In der in Figur 11 dargestellten Position liegen die beiden Klinken 83 mit einem äußeren Ende 85 jeweils gegen die Zahnflanken 86 des mit dem Lüfterrad 16 verbundenen Zahnkranzes 105 an und stellen auf diese Weise rechtsdrehend eine Antriebsverbindung zwischen dem Motor 28 und dem Lüfterrad 16 her. Die Schenkel 112 der Feder 84 drücken über ein Widerlager den Hebelarm 108 mit seinem Ende 85 gegen die Zahnflanke 86.

Wird die Motorausgangswelle 79 entgegengesetzt zum Uhrzeigerdrehsinn angetrieben, dann werden die Klinken 83 über die Zahnflanken 86 nach außen gedrückt und bei einer Minstdrehzahl aufgrund ihrer exzentrischen Anordnung auf der Klinkenachse 82 gegen die Wirkung der Feder 84 im Uhrzeigerdrehsinn auf der Klinkenachse 82 nach außen geschwenkt, bis sie gegen einen Anschlag 89 der Langlochöffnung 88 zur Anlage gelangen. Das wird dadurch erreicht, daß der Gewichtsanteil des Hebelarms 108 größer ist als der mit Bezug auf die Klinkenachse 82 andere Hebelarm 109 der Klinkenachse 83. Hierdurch wird das Lüfterrad 16 von der Motorausgangswelle 79 abgekuppelt. Diese Stellung bleibt so lange bestehen, bis sich durch Drehzahlverringerung das Fliehkraftmoment so weit reduziert, daß das Federkraftmoment überwiegt und die Klinken 83 wieder in die Einrastposition gemäß Figur 11 zurückkehren (vergl. die mit ausgezogenen Linien dargestellte Position der Klinken 83).

Durch den Antrieb der Motorausgangswelle 79, ähnlich der Wirkungsweise gemäß Figur 11, jedoch entgegengesetzt zum Uhrzeigerdrehsinn, werden nun zwei weitere, unterhalb des Mitnehmerflansches 81 angeordnete Klinken 90 ebenfalls mittels der Feder 84 auf den Klinkenachsen 82 verschwenkt

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und rasten mit ihren Enden 85 in die Zahnflanken 86 ein, so daß nun die Pumpe 23 über den gleichen Motor 28 und über eine auf der Motorausgangswelle 79 angeordnete Hohlwelle 107 betätigt wird, während die beiden oberen Klinken 83 außer Wirkung bleiben. Zu Beginn des Reinigungsprozesses wird nur die Pumpe 23 gemäß Figur 11 angetrieben und das Lüfterrad 16 gemäß Figur 5 freigegeben.

Die beiden unteren Klinken 90 verlassen ihre Rastposition erst wieder und lösen dadurch die Antriebsverbindung zwischen Motor 18 und Förderpumpe 23 auf, wenn die Drehrichtung des Motors 28 geändert wird. Da die äußeren Enden der Klinken 83, 90 nicht über die Zahnflanken 86 rutschen, treten bei Freilauf der Klinken 83, 90 keine Antriebsgeräusche und kein Verschleiß auf.

Durch die vorteilhafte Antriebsverbindung zum wahlweisen Antrieb von Förderpumpe 23 und Lüfterrad 16 kann auf einen zweiten Antriebsmotor für den getrennten Antrieb von Förderpumpe 23 und Lüfterrad 16 verzichtet werden, so daß Kosten eingespart werden können.

Der Motor 28 und das Lüfterrad 16, sowie die in den Figuren 5, 10 und 11 nicht dargestellte Pumpe 23 und eventuell der Reinigungsflüssigkeitsbehälter 61 können coaxial untereinander angeordnet sein, so daß die Getriebeteile zwischen Motor 28, Pumpe 23 und Lüfterrad 16 auf ein Minimum reduziert werden können und dadurch das Gehäuse 4 der Reinigungseinrichtung 5 kleiner ausgelegt werden kann (vergleiche hierzu Fig. 12).

Ein weiteres Ausführungsbeispiel einer Antriebsvorrichtung für die Pumpe 23 und die Trockenvorrichtung mit dem

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Lüfterrad 16 ist in Figur 12 dargestellt.

Ein Freilauf 78, ähnlich der Freilaufeinrichtung gemäß Figur 11 besteht hier aus nur zwei Klinken 83 oder anderen Kupplungselementen. Die Kupplungselemente stellen eine Antriebsverbindung zwischen Motor 13 und Pumpe 23 her bzw. verhindern bei Drehrichtungsumkehr des Motors 13 das Mitdrehen der Pumpe 23. Anstelle der in Figur 11 dargestellten Freilaufeinrichtung kann auch eine anders ausgebildete Freilaufeinrichtung eingesetzt werden.

Stellt der Freilauf eine Antriebsverbindung zwischen Motor 13 - z. B. dreht der Motor im Gegenuhrzeigersinn - und der Pumpe 23 her, wird die Pumpe 23 gemeinsam mit dem Lüfterrad 16 angetrieben und die Pumpe 23 kann Reinigungsflüssigkeit zum Aufnahmeteil 7 leiten.

Das Lüfterrad 16 kann keine Luft aus dem Aufnahmeteil 7 absaugen, da ein Lamellenverschluß 149 in der Öffnung 18 durch den vom Lüfterrad 16 erzeugten Unterdruck verschlossen bleibt.

Der Elektromotor 13 treibt aufgrund der sehr einfach ausgebildeten Freilaufeinrichtung das Lüfterrad 16 ständig in beiden Richtungen an, so daß beim Antrieb des Motors 13 im Uhrzeigersinn der Luftstrom des Lüfterrads 16 den in der Öffnung 18 vorgesehenen Lamellenverschluß 149 öffnet und dem Scherkopf 3 Luft für den Trockenprozeß zuführt.

Wird der Motor 13 entgegengesetzt zum Uhrzeigersinn angetrieben, erzeugt der Luftstrom des ständig angetriebenen Lüfterrads 16 einen Unterdruck im Bereich der Öff-

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nung 18, so daß der Lamellenverschluß 149 wieder geschlossen wird bzw. geschlossen bleibt.

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Patentansprüche

1. Reinigungsvorrichtung (5) zur Reinigung des Scher-
kopfs (3) eines Trockenrasierapparats (1) mit einem
einem Aufnahmeteil (7), in das der Scherkopf (3)
einsetzbar ist, einem Reinigungsflüssigkeit auf-
weisenden Reinigungsflüssigkeitsbehälter (61),
sowie einer von einem Motor (28) antreibbaren För-
dereinrichtung für die Reinigungsflüssigkeit,
dadurch gekennzeichnet, daß der Reinigungsflüssig-
keitsbehälter (61) von der Reinigungsvorrichtung
(5) trennbar ist und einen integrierten Filter
(24) aufweist.
2. Reinigungsvorrichtung nach Anspruch 1, dadurch
gekennzeichnet, daß der Reinigungsflüssigkeits-
behälter (61) aus zwei Kammern gebildet ist, wobei
die eine Kammer zur Aufnahme der Reinigungsflüs-
sigkeit dient und die andere Kammer als Filter
(24) ausgebildet ist.
3. Reinigungsvorrichtung nach Anspruch ²1, dadurch
gekennzeichnet, daß die Kammern nach außen ver-
schlossen und mittel- oder unmittelbar an Leitun-
gen (50, 64) der Förderpumpe (23) und des Aufnah-
meteils (7) lösbar angeschlossen sind.
4. Reinigungsvorrichtung nach Anspruch 1, dadurch
gekennzeichnet, daß der Reinigungsflüssigkeits-
behälter (61) oder die Kammern Öffnungen (62, 63)
oder lösbare Verbindungs- oder Kupplungselemente
aufweisen, die in entsprechende Gegenstücke ein-
steck- und/oder festklemmbar und abdichtbar sind.

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5. Reinigungsvorrichtung nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß zumindest einer der Leitungen (50, 64) endseitig eine Spitze (103) aufweist und der Reinigungsflüssigkeitsbehälter (61) und/oder die Öffnungen (62, 63) mittels einer Folie bzw. eines Laminats (74) verschließbar sind, durch die die Leitungen (50, 64) einsteckbar sind.
6. Reinigungsvorrichtung nach Anspruch ⁴1, dadurch gekennzeichnet, daß in den Öffnungen (62, 63) des Reinigungsflüssigkeitsbehälters (61) je ein Dichtelement vorgesehen ist, das von den Endstücken der Leitungen durchstechbar ist.
7. Reinigungsvorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß der Reinigungsflüssigkeitsbehälter (61) stirnseitig mit Zentrierelementen (73) versehen ist, über die der Filter (24) im Reinigungsflüssigkeitsbehälter (61) ausgerichtet bzw. seitlich abgestützt wird.
8. Reinigungsvorrichtung nach Anspruch 7, dadurch gekennzeichnet, daß die Zentrierelemente (73) als im Deckel (72) des Reinigungsflüssigkeitsbehälters (61) vorgesehene Stege ausgebildet sind.
9. Reinigungsvorrichtung nach Anspruch 7, dadurch gekennzeichnet, daß der Filter (24) fest und koaxial im Gehäuse (101) des Reinigungsflüssigkeitsbehälters (61) zwischen der koaxial angeordneten Einlaßöffnung (62) und dem Boden (67) des Gehäuses (101) angeordnet ist.

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10. Reinigungsvorrichtung nach Anspruch 7, dadurch gekennzeichnet, daß der Filter (24) aus einem ein Gewebe bzw. einen Vlieswerkstoff aufweisenden Filterrohr besteht, das sich über die gesamte Höhe des Gehäuses (101) erstreckt.
11. Reinigungsvorrichtung nach Anspruch 7, dadurch gekennzeichnet, daß der Filter (24) an seinen beiden Enden durch die Zentrierelemente (73) koaxial im Gehäuse (101) gesichert ist.
12. Reinigungsvorrichtung nach Anspruch 7, dadurch gekennzeichnet, daß der Filter (24) an seinem anderen Ende in einer am Boden (67) des Gehäuses (101) vorgesehenen Ringnut (68) zentriert und fest aufgenommen ist.
13. Reinigungsvorrichtung nach Anspruch 12, dadurch gekennzeichnet, daß die Ringnut (68) aus einer rechtwinklig am Boden (67) des Gehäuses (101) angeordneten Wand bzw. Aufbörtelung (69, 71) besteht.
14. Reinigungsvorrichtung nach Anspruch 7, dadurch gekennzeichnet, daß das eine Ende der mit dem Auslaßstutzen der Förderpumpe (23) verbundenen Leitung (50) in die im Deckel (72) koaxial angeordnete Einlaßöffnung (62) und den sich daran anschließenden, ebenfalls koaxial angeordneten, Filter (24) und die zweite im Reinigungsflüssigkeitsbehälter (61) vorgesehene, mit dem Aufnahmeteil (7) oder mittelbar mit dem Saugstutzen der Förderpumpe (23) verbundene Leitung (64) in die

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Auslaßöffnung (63) des Deckels (72) dichtend einsetzbar sind.

15. Reinigungsvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Reinigungsflüssigkeitsbehälter (61) in einem Wandhalter (38) integrier- und fixierbar ist, in den der Rasierapparat (1) von der Seite her einsetzbar und über ein Schaltelement (9) mechanisch und/oder elektrisch verriegelbar ist.
16. Reinigungsvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Rasierapparat (1) in ein zur Atmosphäre hin offenes Aufnahmeteil (7) einsetzbar ist, das mittels der Förderpumpe (23) mit Reinigungsflüssigkeit aus dem nach außen hin verschlossenen Reinigungsflüssigkeitsbehälter (61) versorgt wird.
17. Reinigungsvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Rasierapparat (1) aus dem im Wandhalter (38) integrierten Reinigungsflüssigkeitsbehälter (61) über die Förderpumpe (23) zuerst mit Reinigungsflüssigkeit versorgt und anschließend mittels eines in der Reinigungsvorrichtung (5) integrierten Lüfterrads (16) getrocknet wird, wobei die Förderpumpe (23) und das Lüfterrad (16) über einen einzigen Motor (28) mittels einer Freilaufeinrichtung (104) wahlweise rechts- bzw. linksdrehend antreibbar sind.

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18. Reinigungsvorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Förderpumpe (23), der Motor (28) und/oder das Lüfterrad (16) und der Reinigungsflüssigkeitsbehälter (61) ganz oder zumindest annähernd axial zueinander ausgerichtet und/oder im Gehäuse (4) des Wandhalters (38) bzw. der Reinigungsvorrichtung (5) eingebaut sind.

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Zusammenfassung (Figur 5)

Die Erfindung bezieht sich auf eine Reinigungsvorrichtung 5 zur Reinigung des Scherkopfs 3 eines Trockenrasierapparats 1 mit einem Anstrichmittel 7, in das der Scherkopf 3 einsetzbar ist, einem Reinigungsflüssigkeit aufweisenden Reinigungsflüssigkeitsbehälter 61, sowie einer von einem Motor 28 antreibbaren Fördereinrichtung für die Reinigungsflüssigkeit, wobei der Reinigungsflüssigkeitsbehälter 61 von der Reinigungsvorrichtung 5 trennbar ist und einen integrierten Filter 24 aufweist.

08/310681

Declaration and Power of Attorney For Patent Application

Erklärung Für Patentanmeldungen Mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen.

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Reinigungsvorrichtung zur Reinigung des
Scherkopfes eines Trockenrasierapparates

deren Beschreibung

(zutreffendes ankreuzen)

☒ hier beigefügt ist.

☐ am _____ unter der

Anmeldungsseriennummer _____

eingereicht wurde und am _____
abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Cleaning Device for Cleaning the Shaving
Head of a Dry Shaving Apparatus

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as

Application Serial No. _____

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

German Language Declaration

Prior foreign applications

Priorität beansprucht

Priority Claimed

P 44 02 237.9-23

DE

26th January 1994

(Number)
(Nummer)(Country)
(Land)(Day/Month/Year Filed)
(Tag/Monat/Jahr eingereicht)☒
Yes
Ja☐
No
Nein(Number)
(Nummer)(Country)
(Land)(Day/Month/Year Filed)
(Tag/Monat/Jahr eingereicht)☐
Yes
Ja☐
No
Nein(Number)
(Nummer)(Country)
(Land)(Day/Month/Year Filed)
(Tag/Monat/Jahr eingereicht)☐
Yes
Ja☐
No
Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 112 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)
(Anmeldeseriennummer)(Filing Date)
(Anmeldedatum)(Status)
(patentiert, anhängig,
aufgegeben)(Status)
(patented, pending,
abandoned)(Application Serial No.)
(Anmeldeseriennummer)(Filing Date)
(Anmeldedatum)(Status)
(patentiert, anhängig,
aufgegeben)(Status)
(patented, pending,
abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: (Name und Registrationsnummer anführen)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

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Unterschrift des Erfinders	Datum	Second inventor's signature	Date
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(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben.)

(Supply similar information and signature for third and subsequent joint inventors.)

970-101

370681

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January 10, 1995

Attorney Docket No.: 02894/285001

BOX PATENT APPLICATION

Commissioner of Patents and Trademarks
Washington, DC 20231

Presented for filing is a new original patent application of:

Applicant: GEBHARD BRAUN
Title: CLEANING DEVICE FOR CLEANING THE SHAVING HEAD OF A DRY SHAVING APPARATUS

Enclosed are the following papers, including all those required for a filing date under 37 CFR §1.53(b):

Pages of Specification	26
Pages of Claims	5
Pages of Abstract	1
Pages of Declaration	3
Sheets of Drawing	8
Pages of English Translation	29

Under 35 USC §119, this application claims the benefit of a foreign priority application filed in Germany, serial number P 44 02 237.9-23, filed January 26, 1994. A certified copy of the priority application is enclosed.

Basic filing fee	730.00
Total claims in excess of 20 times \$22.00	0.00
Independent claims in excess of 3 times \$76.00	0.00
Multiple dependent claims	240.00
Total filing fee:	\$ 970.00

A check for the filing fee is enclosed. Please charge any other required fees, or apply any credits, to Deposit Account No. 06-1050, referencing the Attorney Docket number shown above.

If this application is found to be INCOMPLETE, or if it appears that a telephone conference would helpfully advance prosecution, please telephone the undersigned at 617/542-5070.

"EXPRESS MAIL" Mailing Label Number RB656234876us

Date of Deposit January 10, 1995

I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Richard Sanders
Richard Sanders

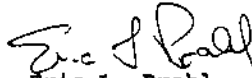
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BOX PATENT APPLICATION
January 10, 1995
Page 2

Kindly acknowledge receipt of this application by returning the enclosed postcard.

Respectfully submitted,


Eric L. Prahl
Reg. No. 32,590

Enclosures



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 Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
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06/0701800 01/10/95 BRAUN G 02894/285001

0381/0302

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0000
 DATE MAILED:

NOTICE TO FILE MISSING PARTS OF APPLICATION 03/02/95
FILING DATE GRANTED

An Application Number and Filing Date have been assigned to this application. However, the items indicated below are missing. The required items and fees identified below must be timely submitted **ALONG WITH THE PAYMENT OF A SURCHARGE** for items 1 and 3-6 only of \$ 130.00 for large entities or \$ 65.00 for small entities who have filed a verified statement claiming such status. The surcharge is set forth in 37 CFR 1.16(e).

If all required items on this form are filed within the period set below, the total amount owed by applicant as a ☒ large entity, ☐ small entity (verified statement filed), is \$ 130.00.

Applicant is given **ONE MONTH FROM THE DATE OF THIS LETTER, OR TWO MONTHS FROM THE FILING DATE** of this application, **WHICHEVER IS LATER**, within which to file all required items and pay any fees required above to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

1. ☐ The statutory basic filing fee is: ☐ missing ☐ insufficient. Applicant as a ☐ large entity ☐ small entity, must submit \$ _____ to complete the basic filing fee.
2. ☐ Additional claim fees of \$ _____ as a ☐ large entity, ☐ small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
3. ☐ The oath or declaration:
 - ☐ is missing.
 - ☐ does not cover items omitted at time of execution.

An oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date is required.
4. ☐ The oath or declaration does not identify the application to which it applies. An oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
5. ☐ The signature(s) to the oath or declaration is/are: ☐ missing; ☐ by a person other than the inventor or a person qualified under 37 CFR 1.42, 1.43, or 1.47. A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
6. ☐ The signature of the following joint inventor(s) is missing from the oath or declaration:

_____ An oath or declaration listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.
7. ☒ The application was filed in a language other than English. Applicant must file a verified English translation of the application and a fee of \$ 130.00 under 37 CFR 1.17(k), unless this fee has already been paid.
8. ☐ A \$ _____ processing fee is required since your check was returned without payment. (37 CFR 1.21(m)).
9. ☐ Your filing receipt was mailed in error because your check was returned without payment.
10. ☐ The application does not comply with the Sequence Rules. See attached Notice to Comply with Sequence Rules 37 CFR 1.821-1.825.
11. ☐ Other.

Direct the response and any questions about this notice to, Attention: Application Processing Division,
 Special Processing and Correspondence Branch (703) 308-1202.

A copy of this notice MUST be returned with the response.

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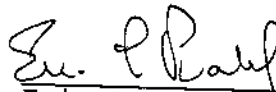
on the post card includes the translation of the attached figure sheet).

Since the application was complete when originally filed, we believe that neither a surcharge or a fee for submitting the translation late is required.

Please apply any charges not covered, or any credits, to Deposit Account No. 06-1050.

Respectfully submitted,

Date: March 27, 1995


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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
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08/30/04 01/10/95 BRALIN 02894/285001

03B1/0302

WILLIS M. ERTMAN
 FISH AND RICHARDSON
 225 FRANKLIN STREET
 BOSTON MA 02110-2604

0000
 DATE MAILED:

NOTICE TO FILE MISSING PARTS OF APPLICATION 03/02/95
FILING DATE GRANTED

An Application Number and Filing Date have been assigned to this application. However, the items indicated below are missing. The required items and fees identified below must be timely submitted **ALONG WITH THE PAYMENT OF A SURCHARGE** for items 1. and 3-6 only of \$ 1.00 for large entities or \$ 0.50 for small entities who have filed a verified statement claiming such status. The surcharge is set forth in 37 CFR 1.16(e).

If all required items on this form are filed within the period set below, the total amount owed by applicant as a ☒ large entity, ☐ small entity (verified statement filed), is \$ 1.00.

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1. ☐ The statutory basic filing fee is: ☐ missing ☐ insufficient. Applicant as a ☐ large entity ☐ small entity, must submit \$ 1.00 to complete the basic filing fee.

2. ☐ Additional claim fees of \$ 1.00 as a ☐ large entity, ☐ small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.

3. ☐ The oath or declaration:
☐ is missing.
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An oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date is required.

4. ☐ The oath or declaration does not identify the application to which it applies. An oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.

5. ☐ The signature(s) to the oath or declaration is/are: ☐ missing; ☐ by a person other than the inventor or a person qualified under 37 CFR 1.42, 1.43, or 1.47. A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.

6. ☐ The signature of the following joint inventor(s) is missing from the oath or declaration:

 An oath or declaration listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

7. ☒ The application was filed in a language other than English. Applicant must file a verified English translation of the application and a fee of \$ 1.00 under 37 CFR 1.17(k), unless this fee has already been paid.

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10. ☐ The application does not comply with the Sequence Rules. See attached Notice to Comply with Sequence Rules 37 CFR 1.821-1.825.

11. ☐ Other.

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Cleaning Device for Cleaning the Shaving Head of a Dry
Shaving Apparatus

This invention relates to a cleaning device for cleaning the shaving head of a dry shaving apparatus, with a cradle structure adapted to receive therein the shaving head, a cleaning fluid container holding a cleaning fluid, as well as a device adapted to be driven by a motor for feeding the cleaning fluid.

From prior U.S. Pat. No. 3,172,416 a cleaning device for the cutter portion of a dry razor is known, comprising a cleaning casing in the upper area of which a seat is provided for receiving therein the cutter portion of an electric razor. According to a first embodiment, the individual components of the cutter portion are cleaned by a continuous stream of air directed to the cutter portion through an impeller means and filter elements. However, in cases where the cutter portion is severely contaminated carrying, for example, sebum, that is, grease particles, cleaning the cutter portion by means of an air stream is not accomplishable to the desired degree. The entire casing of the cleaning device through which air is blown is required to be sealed tight relative to atmosphere to prevent the swirled up hair dust from penetrating to the outside.

The same applies also to the cleaning device according to another embodiment (U.S. Pat. No. 3,172,416) in which the cutter portion is cleaned by a cleaning fluid directed for this purpose through fluid channels provided in the casing. For the full duration of the cleaning cycle, the cutter portion is seated in a cradle which is provided in the upper part of the casing and is at all times filled to capacity with cleaning fluid circulating

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therethrough. To accomplish this, a feed pump is provided in the casing. Because the cleaning fluid is not filtered during the cleaning operation, hair particles enter the cradle again and again, thus reaching the area of the cutter portion, so that this cleaning operation is equally not suited to accomplish satisfactory results, the less so since after deactivation of the pump device cleaning fluid with hair particles remain in the cradle, being thus prevented from being completely removed from the cutter portion. On termination of the cleaning cycle, it is necessary for the razor to be removed from its cradle to allow the cutter portion to drain and to be subsequently dried in the air. In this arrangement, the hair particles entrained with the cleaning fluid continue to adhere to the components of the cutter portion, so that ultimately a perfect cleaning action of the cutter portion is not achievable. The chamber provided in the lower part of the casing for collecting the cleaning fluid and the dirt particles must remain closed during recirculation of the cleaning fluid to prevent the dirt particle sediment accumulated therein from being agitated again. Yet it is not possible to prevent unfiltered cleaning fluid from being continuously directed against the cutter portion during circulation of the cleaning fluid.

Because the container receiving the cleaning fluid is fixedly integrated into the casing of the cleaning device, replacement of the cleaning fluid is a very complex procedure.

Accordingly, it is an object of the present invention to improve upon the cleaning device such as to allow ready replacement of the cleaning fluid container.

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According to the present invention, this object is accomplished in that the cleaning fluid container is separable from the cleaning device and includes a filter means integrally formed therewith. Because the filter is made integrally with the cleaning fluid container, the container is readily removable together with the cleaning fluid after the cleaning fluid is used up or after the filter is largely clogged with dirt particles, such replacement merely involving the step of detaching the container from the feed pump. A new cleaning fluid container including a new filter can then be inserted in the wall mount receiving the dry shaving apparatus and be connected with the feed pump. In this manner, the cleaning device is fully operable again and can be utilized for cleaning the dry shaving apparatus for a prolonged period of time without requiring any intervention for maintenance.

Further, it is advantageous that the cleaning fluid container is comprised of two chambers, one chamber serving to hold the cleaning fluid, the other chamber being configured as the filter means.

According to a further feature of the cleaning fluid container of the present invention, an additional possibility is afforded in that the chambers are closed relative to the outside and are directly or indirectly connected to conduits of the feed pump and the cradle structure in a releasable manner. The coupling members for the releasable connection between the feed pump and the chambers may also be provided at the respective ends of the conduit between the feed pump and the cleaning fluid container or be formed integral with the conduit.

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Advantageously, the cleaning fluid container or the chambers include ports or releasable connecting or coupling members which are adapted to be inserted in and/or clamped and sealed relative to mating members, at least one of the conduits has a tip at its end, and the cleaning fluid container and/or the ports are closable by means of a foil or a laminate through which the conduits are insertable.

It is a further advantage that a sealing member each is provided in the ports of the cleaning fluid container, which sealing members are adapted to be pierced by the respective ends of the conduits. Because the connection conduits may be provided with a tip or a sharp edge in the area of their respective ends, the ends of the connection conduits are readily insertable into the mating member which may be covered, for example, with a foil, a metal or plastic laminate. This completely dispenses with the need for assembly tools. By inserting the conduits into the associated inlet and outlet ports of the cleaning fluid container, a perfect seal is obtained between the conduits and the ports, thereby obviating the provision of additional sealing means.

In a further feature of the present invention it is advantageous that the cleaning fluid container has at its end locating means for aligning and laterally supporting the filter in the interior of the cleaning fluid container. The provision of locating means enables the filter to be accurately aligned for mounting in the cleaning fluid container, because the locating means force the filter into the proper position.

It is of particular importance to the present invention that the locating means are configured as rib means

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provided in the lid of the cleaning fluid container, and that the filter is fixedly and coaxially arranged within the casing of the cleaning fluid container between the coaxially arranged inlet port and the bottom of the casing. By virtue of the coaxial arrangement of the filter in the casing of the cleaning fluid container, it is ensured that the entire filter surface is well utilized.

In connection with the configuration and arrangement of the present invention, it is advantageous that the filter is comprised of a filter tube including a fabric or a mat material and extending along the full height of the casing.

It is a further advantage that the filter is coaxially secured in the casing at both its ends by the locating means, and that at one end the filter is centrally located and fixedly received in an annular groove provided at the bottom of the casing. Still further, it is advantageous that the annular groove is comprised of a wall or hem flange disposed at the bottom of the casing at right angles thereto, that the one end of the conduit connected to the outlet means of the feed pump is sealingly insertable into the inlet port coaxially arranged in the lid and the adjoining filter equally coaxially arranged, and that the second conduit provided in the cleaning fluid container and connected to the cradle structure or indirectly to the intake means of the feed pump is sealingly insertable into the outlet port of the lid. With the rectangular annular groove formed by means of wall portions, it is ensured that the filter is fixedly located in the casing of the cleaning fluid container in a simple and perfect fashion. In

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addition, this arrangement lends itself to mechanization readily.

To this effect, it is advantageous that the cleaning fluid container is adapted to be integrated and fixedly secured in a wall mount in which the shaving apparatus is insertable from the side and is mechanically and/or electrically interlockable by a switching means.

Still further it is advantageous that the shaving apparatus is receivable in a cradle structure that is open towards atmosphere and is supplied with cleaning fluid from the outwardly closed cleaning fluid container by means of the feed pump. This results in an open system for the cleaning device, enabling the shaving apparatus to be inserted laterally from outside into the cleaning device at any time, without the need to remove components or covers from the cleaning device. The cradle structure invariably contains only as much fluid as is necessary for cleaning the shaving head. The remaining cleaning fluid is held in the cleaning fluid container which is closed relative to atmosphere, thus preventing the volatile substances admixed to the cleaning fluid from vaporizing too rapidly.

It is another advantage that the shaving apparatus is first supplied with cleaning fluid from the cleaning fluid container integrated into the wall mount by means of the feed pump, and is subsequently dried by means of an impeller integrated into the cleaning device, with the feed pump and the impeller being adapted to be driven selectively in a clockwise or counterclockwise direction by means of a single motor using an overrunning device.

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Another advantage is that the feed pump, the motor and/or the impeller and the cleaning fluid container are disposed in coaxial alignment with each other wholly or at least approximately and/or are mounted in the casing of the wall mount or the cleaning device.

Further advantages and details of the present invention will become apparent from the subsequent description and the accompanying drawings illustrating some preferred embodiments.

An embodiment of the present invention is shown in the Figures by way of example without being limited to this particular embodiment. In the drawings,

FIG. 1 is a partial sectional view of a cleaning device in which a shaving apparatus is received;

FIG. 2 is a front view of the cleaning device of FIG. 1;

FIG. 3 is a top plan view of the cleaning device of FIG. 2;

FIG. 4 is a schematic diagram depicting the individual cleaning stages as a function of time;

FIG. 5 is a sectional view taken along the line B-B of FIG. 10;

FIG. 6 is a schematic representation of the fluid circuit of the cleaning device, in particular between the cradle structure, the filter means and the cleaning fluid container configured as a cartridge;

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apparatus 1, and holds only as much cleaning fluid as is necessary for the particular cleaning operation.

The cleaning device 5, in particular the wet portion thereof, that is, the cradle 7, is configured as a cleaning system open to atmosphere, whilst a cleaning fluid container 61, as subsequently described with reference to the embodiment of FIG. 7, is closed.

With its shaving head 3 in an inverted position, the shaving apparatus 1 is seated in the upwardly open cradle 7 configured as wet portion. During the cleaning cycle, cleaning fluid 40 is continuously flushed through the cradle 7. At a particular level of contamination, the cleaning fluid may be drained through a closable conduit 76, and fresh fluid may be substituted.

The cradle 7 includes an overflow device 26 which prevents the cleaning fluid in the cradle 7 from exceeding a defined level and ensures that only the shaving head 3 or the lower part of the shaving head is immersed in cleaning fluid. Further, the bottom of the cradle 7 includes an outlet port 27 allowing the cleaning fluid with hair particles to be completely drained into the collecting reservoir 65 after the cleaning cycle is completed. The capacity of the collecting reservoir 65 is substantially smaller compared with the capacity of the cleaning fluid container 61 of FIG. 7. However, the outlet port 27 is dimensioned such that the cradle 7, when supplied with cleaning fluid from a pump 23 described in the following, rather than being allowed to run empty, is at all times kept filled to the rim, with excess cleaning fluid being mainly discharged over the rim of the cradle 7 in the direction of the arrow over the overflow device 26, collecting in the reservoir 65 underneath. In this

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manner, a sufficient amount of cleaning fluid is at all times available for the cleaning cycle. Arranged below the cradle 7 is a collecting dish 77 conformed to the contour of the cradle 7, which dish is connected to the overflow device 26 or is a part of said overflow device 26. As becomes apparent from FIG. 1, the shaving head 3 rests in the cradle 7 by means of supporting means 8 serving to avoid damage to the shaving apparatus as it is placed down in the cradle 7 and to cushion the shaving apparatus during vibration.

Further, by means of a switching means 9 mounted in a bracket 10 the shaving apparatus 1 (FIG. 1) is mechanically and/or electrically interlocked. The bracket 10 is fixedly connected with a wall mount 38 enabling the complete cleaning device 5 with the shaving apparatus 1 to be mounted on a wall or, alternatively, to be kept in a stand for storage.

The switching means 9 which may be configured as a start button is arranged so as to be displaceable in the direction of a longitudinal center line 11 of the shaving apparatus 1 and is connected, by means of an electric control device 29, to timing elements serving to control the cleaning cycle.

The wall mount 38 and the bracket 10 open to the right when viewing FIG. 1 as well as the cradle 7 with the collecting reservoir 65 combine to form the cleaning device 5 which is a unit of U-shaped cross-section. The shaving apparatus 1 may continue to be stored in the wall mount 38 also upon completion of the cleaning cycle, because all cleaning fluid is drained from the wet portion or the cradle 7 after cleaning is terminated. The shaving apparatus 1 may also remain in the wall mount 38 for

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recharging. The cleaning device 5 is suitable for utilization with any type of electric shaving apparatus.

The switching means 9 has at its lower end two relatively spaced contact pins 12 for supplying current to the shaving apparatus 1, which contact pins, on depression of the switching means 9, cooperate with corresponding contact means of the shaving apparatus 1. In this manner, the shaving apparatus 1 can be set in operation when the switching means 9 is depressed and a power cord, not shown, of the cleaning device 5 is connected to an electrical outlet.

Adjacent to the shaving apparatus 1 in the casing 4 of the cleaning device 5 is an electric motor 13 having two electrical contact lugs 14 for connection to the electricity supply. Provided at the lower end of the electric motor 13 is a motor output shaft 15 on which an impeller or impeller wheel 16 is arranged serving in particular for drying the cleaned shaving head 3 of the shaving apparatus 1 following termination of the cleaning cycle of the shaving head 3 described in more detail in the following. The impeller 16 sits in an impeller casing 17 communicating through an opening 18 with the space above the cradle 7, and it directs a continuous stream of hot air heated by a heating means, not shown in the drawings, against the shaving head 3 to effect a drying action following the cleaning operation.

As mentioned in the foregoing, the bracket 10 combines with its vertically extending leg, a vertically extending leg of the wall mount 38 and the cradle 7 to form the U-shaped casing 4 when viewing the cleaning device 5 from the side, in which casing the shaving apparatus 1 is

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readily insertable from the side by imparting to it a lateral tilting motion, to be kept therein for storage.

According to FIG. 1, the cradle 7 extends into the collecting reservoir 65 which is filled with cleaning fluid to two thirds, maximum. Adjoining the underside of the cradle 7 is a connection means 19.

The connection means 19 is fixedly connected with an opening 91, the collecting dish 77 and the overflow device 26, and it is immersed in the cleaning fluid at all times. According to FIG. 1, the cradle 7 is arranged above the collecting reservoir 65 which is filled with some cleaning fluid 40.

The collecting reservoir 65 may be provided with a fluid level indicating means 39 enabling the fluid level to be monitored at all times. According to FIG. 1, the fluid level indicating means 39 may be configured as a small viewing window. In lieu of the viewing window, it is also possible to provide an electronic indicating means comprising suitable sensors indicating the fluid level or also the degree of contamination of the cleaning fluid 40. For example, when the fluid is contaminated to a degree which must not be exceeded, this condition may be indicated by the sensors, thus informing the operator of the need to drain the cleaning fluid 40 through the conduit 76 for replacement. Depending on the embodiment, the sensors may also be used for de-activating the electric control electrodes, thereby automatically interrupting the cleaning cycle and compelling the operator to replace the cleaning fluid.

As becomes apparent from FIG. 1, the connection means 19 is in communication with the collecting

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